

**EVALUATING CRITICAL PERIODS OF EARLY SEASON THRIPS CONTROL****P. Roberts****M. Toews,****University of Georgia****Tifton, GA****J. Greene****Clemson University****Blackville, SC****Abstract**

Field trials were established near Tifton Georgia and Blackville South Carolina to evaluate sensitivity of cotton seedling growth stages to yield loss associated with early season thrips infestations. Plots were arranged in a randomized complete block with four replications. Treatments included progressive and regressive foliar treatment regimes, Temik applied in-furrow at planting, Temik plus foliar insecticides, and an untreated check. Foliar treatments were applied seedlings which were not treated with a preventive at plant insecticide and included applications of acephate at 0.2 lb. ai/acre at 0 days after emergence (DAE), 0 and 7 DAE, 0, 7, and 14 DAE, 0, 7, 14, and 21 DAE, 0, 7, 14, 21, and 28 DAE, 7, 14, 21, and 28 DAE, 14, 21, and 28 DAE, 21, and 28 DAE, and 28 DAE. Acephate was also applied to the Temik plus foliar insecticide treatment at 0, 7, 14, 21, and 28 DAE. Plots were sampled weekly for thrips beginning at emergence for five weeks and two days after each foliar acephate spray. Thrips infestations were moderate/high at the Georgia location and low/moderate at the South Carolina location. Thrips adult populations peaked at 2 DAE (4.85 per plant) at the Georgia location and 9 DAE (1.08 per plant) at South Carolina site. Immature and total thrips peaked approximately 1 week later at both locations; 14.5 per plant in Georgia and 3.55 per plant in South Carolina. Visual thrips damage ratings and plant biomass measures were made at 4-5 weeks after emergence. Treatments which included Temik or foliar sprays at 0 or 7 DAE significantly reduced thrips damage and increased plant dry weights at 35 DAE compared with the untreated at the Georgia location. At the South Carolina location, treatments which included Temik or foliar sprays initiated at 0 DAE significantly reduced thrips damage ratings compared with the untreated. Only three foliar treatment regimes (0, 7, and 14 DAE, 0, 7, 14, and 21 DAE, and 0, 7, 14, 21, and 28 DAE) and Temik treatments significantly increased plant dry weights compared with the untreated at 31 DAE at the South Carolina location. Plots were machine picked at both trial sites. Temik and Temik plus foliar applications of acephate significantly increased yield compared with the untreated at the Georgia location. However, foliar treatment regimes which were initiated at 0 DAE were not significantly different compared with Temik treatments. No significant differences in yield were observed at the South Carolina location. In summary, thrips populations and field environments are unique and vary by location. Such variability demands proper pest and damage monitoring. However these data support the hypothesis that protection from early season thrips during early stages of seedling development are most important. Additional studies of this type will be needed to better define critical periods early season thrips control across varied field environments.